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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,128	04/02/2004	John M. Cioffi	0101-p03	1512
36171 7590 04/19/2007 SYLKE LAW OFFICES, LLC 756 N. MILWAUKEE STREET SUITE 210 MILWAUKEE, WI 53202			EXAMINER SHARON, AYAL I	
			ART UNIT 2123	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/19/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/817,128

**Applicant(s)**

CIOFFI ET AL.

**Examiner**

Ayal I. Sharon

**Art Unit**

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-48 is/are pending in the application.
- 4a) Of the above claim(s) 33-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) 26-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/16/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Introduction***

1. Claims 21-48 of U.S. Application 10/817,128 filed on 04/02/2004 are currently pending.
2. The application claims benefit of U.S. Provisional Application 60/527,853 filed on 12/07/2003.

### ***Claim Objections***

3. Claims 26-31 are objected to because of the following informalities: the claimed acronyms are not defined in the bodies of the claims. Appropriate correction is required.
4. Claims 27 is objected to because of the following informalities: "of part of the DSL" should be "for part of the DSL". Appropriate correction is required.
5. Claim 32 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

### ***Allowable Subject Matter***

6. Claims 28-32 contain allowable subject matter.

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7. The following is a statement of reasons for the indication of allowable subject matter: the claimed steps for calculating the MSE is not expressly taught by the cited prior art.
8. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

***Election/Restrictions***

9. Newly submitted claims 33-48 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The currently amended claims in the application are directed to methods of "estimating the Hlog function of a line in a DSL system" and "computing the MSE noise of a line in a DSL system." The newly added claims are directed to a method of "generating a model of a DSL system", wherein the scope and breadth of the newly added claims differs substantially from those of the previously presented claims.
10. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 33-48 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 21-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. More specifically, independent Claim 21 recites the limitation "the estimated Hlog function" in line 17. There is insufficient antecedent basis for this limitation in the claim. Moreover there appears to be a missing step of generating the estimated Hlog function (unless the step of "plotting the attenuation value" corresponds to such a step).

14. Dependent claims 22-27 inherit this defect.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. The prior art used for these rejections is as follows:

17. Ginis et al., U.S. PG-PUB 2003/0086514. (Hereinafter "**Ginis**").

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18. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

19. **Claims 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ginis.**

20. In regards to Claim 21, Ginis teaches the following limitations:

21. *(currently amended) A method of estimating evaluating the Hlog function of a line in a DSL system, the method comprising:*  
*generating a plurality of attenuation data points, wherein each attenuation data point corresponds to a different frequency carrier mask and comprises an attenuation value, further wherein generating a single attenuation data point comprises:*  
*setting a data-bearing frequency carrier mask;*  
*transmitting data using one or more frequencies in the carrier mask;*  
*receiving an attenuation value for the transmitted data; and*  
*plotting the attenuation value; and*  
*performing at least one of the following:*  
*storing at least one of the following:*  
*each generated attenuation data point; or*  
*each plotted attenuation values; or*  
*generating a graphical depiction of the estimated Hlog function based on the plurality of generated attenuation data points.*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

In particular, paragraphs [0168] and [0169] teach the following (emphasis added):

[0168] Additionally, as in the situation illustrated in FIG. 5, VDSL systems suffer from the fact that upstream signals on short lines detrimentally affect upstream performance on long lines (similarly to the near-far situation in wireless communications). **In order to avoid imposing an overly restrictive universal PSD mask, power back-off methods have been proposed which effectively make the PSD mask dependent solely on the loop length of the specific user.** A similar scenario, where the downstream communication of neighboring DSL systems may suffer considerably is shown in FIG. 16. Dramatic loop length differences

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will occur more frequently as ONUs are installed on some lines while twisted pair connections to the COs remain.

[0169] Vectoring combined with full channel matrix knowledge can prove effective in limiting the crosstalk induced by vectored systems, without resorting to the introduction of a universal PSD mask, or the use of power back-off methods (which do not necessarily take into account knowledge about crosstalk coupling resulting from matrix channel identification).

Examiner interprets that these power backoff methods, that are dependent upon the loop length of the specific user, anticipate the claimed invention.

21. In regards to Claim 22, Ginis teaches the following limitations:

*22. (original) The method of Claim 21 wherein  $f$  is the only frequency in each carrier mask and the corresponding received attenuation value is the insertion loss of the line for  $f$ .*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

22. In regards to Claim 23, Ginis teaches the following limitations:

*23. (original) The method of Claim 21 wherein the data-bearing carrier mask comprises a band of frequencies having a lower bound of  $f$  and further wherein the received attenuation value is an approximation of the insertion loss of the line for  $f$ .*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

23. In regards to Claim 24, Ginis teaches the following limitations:

*24. (currently amended) The method of Claim 21 further comprising: approximating a channel transfer function for an entire DSL system usable frequency range on the basis of received attenuation values.*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

24. In regards to Claim 25, Ginis teaches the following limitations:

*25. (currently amended) The method of Claim 24 further comprising:*

*removing undesirable effects from the approximated channel transfer function.*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

25. In regards to Claim 26, Ginis teaches the following limitations:

*26.(currently amended) The method of Claim 21 further comprising:  
determining at least one of the following values for the line: QLN; MSE; or  
SNR.*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

26. In regards to Claim 27, Ginis teaches the following limitations:

*27.(currently amended) The method of Claim 26 further comprising:  
setting or recommending an operational mode of part of the DSL system  
based on at least one of the following values for the line:  
Hlog;  
QLN;  
MSE; or  
SNR.*

(See Ginis, especially: paragraphs [0034] to [0041], [0061], [0083], and [0168] to [0172]))

### ***Response to Amendment***

#### **Re: Claim Rejections – 35 USC § 112**

27. The rejection of claim 30 is rendered moot in light of Applicant's amendment of the claim. The rejection has been withdrawn.



*Re: Claim Rejections – 35 USC § 101*

28. Examiner finds that the amended claims overcome the 35 USC § 101 rejections.

Amended claim 21 recites transmitting, receiving, plotting, and storing data points used to estimate an Hlog function. Examiner finds that these actions satisfy the requirement of a "concrete, useful, tangible result."

*Re: Claim Rejections – 35 USC § 102*

29. Applicant has cancelled claims 1-20, rendering the rejections of those claims moot.

30. Regarding the rejections of claims 21-27, the Applicant has merely asserted that the newly amended independent claim 21 is not anticipated by Ginis, but has not explained why. In light of the amendments to the claims, examiner is modifying the explanation as to why Ginis anticipates claim 21-27.

***Conclusion***

31. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.

32. International Telecommunication Union, "ITU-T Recommendation G.993.2."

Study Group 15, TD 168 (PLEN/15). May 16-27, 2005. pp.1-14, 84-94, and 158-161. (This reference makes repeated mention of PSD Masks, and Hlog. The references to Hlog are at pp.85, 87, 91, 92-94., and 158-161. See especially

pp.92-93. The date of the reference, however does not qualify as prior art.

Moreover, the footnote on p.1 indicates that the document was private and not intended for publication).

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

34. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### ***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is

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(571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:


USPTO  
P.O. Box 1450  
Alexandria, VA 22313-1450

or hand carried to:

USPTO  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon  
Art Unit 2123  
April 15, 2007

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
4/14/07